

# Claims

- [c1] 1. An electronic stitch length regulator comprising: a position sensor; a sensor arm; a base plate; an electronic circuit; an electrical output connector.
- [c2] 2. The electronic stitch length regulator of claim 1, wherein the sensor arm is pivotally mounted in the base plate.
- [c3] 3. The electronic stitch length regulator of claim 2, wherein the sensor arm is preloaded longitudinally with a spring element.
- [c4] 4. The electronic stitch length regulator of claim 1, wherein the base plate is mounted below the sewing machine.
- [c5] 5. The electronic stitch length regulator of claim 1, wherein the electronic circuit converts speed of position sensor to electrical resistance measured in Ohms.
- [c6] 6. The electronic stitch length regulator of claim 5, wherein the frequency output of the sensor comprises two channels.

- [c7] 7. The electronic stitch length regulator of claim 6, wherein each channel of frequency signal is converted to a voltage respectively.
- [c8] 8. The electronic stitch length regulator of claim 7, wherein the two channels of voltage are added to form a composite total voltage.
- [c9] 9. The electronic stitch length regulator of claim 8, wherein the composite total voltage is used as an input signal to a comparator circuit.
- [c10] 10. The electronic stitch length regulator of claim 9, wherein the comparator output is dependent on the composite total voltage.
- [c11] 11. The electronic stitch length regulator of claim 10, wherein the comparator output controls an optoisolator integrated circuit.
- [c12] 12. The electronic stitch length regulator of claim 11, wherein the output of the optoisolator circuit is connected to a plurality of fixed electrical resistors.
- [c13] 13. The electronic stitch length regulator of claim 12, wherein the plurality of fixed electrical resistors are connected to an electrical output connector.
- [c14] 14. The electronic stitch length regulator of claim 13,

wherein the electrical output connector plugs into the sewing machine foot pedal connector port.